

IN THE CLAIMS

This Listing of Claims will replace all prior versions, and listings, of Claims in the application:

Claim 1. (Currently Amended) A tubular solid oxide fuel cell assembly for use with fuel gas comprising an anode side defining a tubular passage adapted for passage of the fuel gas, the anode side ~~comprising an~~ including a ceramic-type anode layer ~~formed by sintering green material~~ and an anode-side current collector in electrical contact with the anode layer, a solid oxide electrolyte layer on a radially outer surface of the anode layer, a cathode layer on a radially outer surface of the electrolyte layer, and a cathode-side current collector on the cathode layer, ~~wherein~~ the anode-side current collector ~~comprises~~ including a preformed tubular metallic structure ~~which is adapted that is gas permeable to permit fuel gas in the passage to contact the anode layer, at least the~~ and has a surface of the tubular metallic structure being that is formed of one of Ni or and Ni alloy, and wherein the anode layer is being formed of a green material sintered on the tubular metallic structure ~~such so~~ so that the tubular metallic structure is at least partly embedded in the anode layer and reinforces the anode layer.

Claim 2. (Original) An assembly according to Claim 1 wherein the tubular metallic structure is at least substantially completely embedded in the anode layer.

Claim 3. (Previously Presented) An assembly according to Claim 1 wherein the tubular metallic structure has surface formations thereon which project radially outwardly into the anode layer.

Claim 4. (Previously Presented) An assembly according to Claim 1 wherein the tubular metallic structure has concave formations on a radially outer surface thereof into which the anode layer extends.

Claim 5. (Previously Presented) An assembly according to Claim 1 in which the tubular metallic structure extends substantially the full length of the tubular passage.

Claim 6. (Previously Presented) An assembly according to Claim 1 wherein the tubular metallic structure has a wall thickness in the range of 20 to 200 μm .

Claim 7. (Previously Presented) An assembly according to Claim 1 wherein the tubular metallic structure comprises a spiral or mesh of thread.

Claim 8. (Original) An assembly according to Claim 7 wherein the thread is a nickel thread.

Claim 9. (Previously Presented) An assembly according to Claim 1 wherein the tubular metallic structure comprises a support tube which is at least substantially rigid.

Claim 10. (Original) An assembly according to Claim 9 wherein the support tube is selected from an expanded metal tube, a woven mesh tube and a perforated tube.

Claim 11. (Previously Presented) An assembly according to Claim 9 or wherein the support tube is formed of nickel or nickel alloy.

Claim 12. (Previously Presented) An assembly according to Claim 9 wherein the support tube comprises a substrate of heat resistant, heat conducting metal and a nickel or nickel alloy surface layer.

Claim 13. (Original) An assembly according to Claim 12 wherein the substrate is steel.

Claim 14. (previously presented) An assembly according to Claim 12 wherein the surface layer is a foil or is coated on the substrate.

Claim 15. (Previously Presented) An assembly according to Claim 1 wherein a thermally conductive tube liner is provided in the passage for conducting heat therefrom.

Claim 16. (Original) An assembly according to Claim 15, wherein the tube liner is tubular.

Claim 17. (Currently Amended) An assembly according to Claim 1 wherein the anode layer ~~material is an~~ extruded on layer formed on the tubular metallic structure of the anode-side current collector ~~and cured~~.

Claim 18. (Previously Presented) An assembly according to Claim 1 wherein the anode layer is a nickel cermet and has a thickness in the range of about 50 to 500 μm .

Claim 19. (Previously Presented) An assembly according to Claim 1 wherein the material of the electrolyte layer is provided on the anode layer by a method selected from slurry coating or otherwise depositing the electrolyte layer on the anode layer, extrusion on to the anode layer and co-extrusion with the material of the anode layer.

Claim 20. (Previously Presented) An assembly according to Claim 1 wherein the electrolyte layer has a thickness of less than 70 μm .

Claim 21. (Previously Presented) An assembly according to Claim 1 wherein the cathode layer has a thickness in the range of about 30 to 100 μm .

Claim 22. (Previously Presented) An assembly according to Claim 1 wherein the cathode layer is discontinuous along the length of the assembly to provide a plurality of longitudinally spaced cathode portions.

Claim 23: (Original) An assembly according to Claim 22 wherein each cathode portion has a respective cathode-side current collector.

Claim 24. (Previously Presented) An assembly according to Claim 22 wherein at least some of the longitudinally spaced cathode portions are electrically connected in series.

Claim 25. (Previously Presented) An assembly according to Claim 1 wherein the cathode layer is discontinuous around the assembly.

Claim 26. (Previously Presented) An assembly according to Claim 24 wherein the discontinuity around the assembly is provided by at least one longitudinally-extending gap in the cathode layer and wherein the series connection of said longitudinally spaced cathode portions is provided by a strip of electrically conductive material in said gap.

Claim 27. (Original) An assembly according to Claim 26 wherein the strip is formed of the same material as the cathode-side current collector.

Claim 28. (Previously Presented) An assembly according to Claim 1 wherein the cathode-side current collector comprises a metallic layer of noble metal or noble metal alloy which is adapted to permit oxygen containing gas around the assembly to contact the cathode layer.

Claim 29. (Original) An assembly according to Claim 28 wherein the noble metal is silver.

Claim 30. (Previously Presented) An assembly according to Claim 1 wherein the cathode-side current collector comprises at least one mesh deposited on the cathode layer.

Claim 31. (Original) An assembly according to Claim 30 wherein the at least one mesh is screen-printed on the cathode layer.

Claim 32. (Previously Presented) An assembly according to Claim 1 wherein the cathode-side current collector has a thickness in the range of about 20 to 100 μm .

Claims 33. - 50. Canceled.

Claim 51. (Previously Presented) A fuel cell bundle comprising a plurality of tubular fuel cell assemblies according to Claim 1 each mechanically connected to one or more adjacent tubular fuel cell assemblies.

Claim 52. (Original) A bundle according to Claim 51 wherein the mechanical connection is continuous along at least part of the length of the tubular fuel cell assemblies.

Claim 53. (Original) A bundle according to Claim 51 wherein the mechanical connection is intermittent along the length of the tubular fuel cell assemblies.

Claim 54. (Previously Presented) A bundle according to Claim 51 wherein the mechanical connection is rigid.

Claim 55. (Previously Presented) A bundle according to Claim 51 wherein the mechanical connection is flexible.

Claim 56. (Previously Presented) A bundle according to Claim 51 wherein the mechanical connection also provides an electrical connection between the adjacent tubular fuel cell assemblies.

Claim 57. (Previously Presented) A bundle according to Claim 56 wherein the mechanical connection is by connector means formed of the material of the cathode-side current collectors.

Claims 58. - 65. Canceled.